REMARKS

Claims 1, 8, 20-22, 24, 26, 28, and 30-36 have been amended. Claims 6, 9-19, 25, and 29 were previously cancelled. Re-examination and reconsideration are requested.

In the office action, paper no. 15, dated June 26, 2003, for the RCE application, the examiner rejected claims 20-24 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The examiner rejected claims 26-28 under 35 U.S.C. § 112 as failing to comply with the enablement requirement. The examiner also rejected claims 1-3, 5, 7, 8, 26-28 and 30-36 under 35 U.S.C. § 112, second paragraph, as being indefinite for failure to point out and distinctly claim the subject matter of the invention.

The examiner rejected claims 1-3, 7 and 8 under 35 U.S.C. § 102(b) as being anticipated by Pongratz. He rejected claims 1-3 and 8 under 35 U.S.C. § 102(b) as being anticipated by Miller.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being obvious over Miller in view of Alex. And claims 20-28 and 30-36 were rejected under 35 U.S.C. § 103(a) as being obvious over Pongratz or Miller "in view of the applicant's own admission of prior art . . . ."

However, none of the pending claims are anticipated by or obvious over the cited references especially in light of the amendments. The examiner's rejections are traversed, as is explained in more detail below.

Re the claims:

Claims 1, 8, 20-22, 24, 26-28, and 31-36 have been amended to include the limitation "presence or absence of a lattice defect" to more clearly claim the subject matter. No new matter is introduced.

Claim 30 has been amended to depend from claim 26 instead of claim 29 which was previously canceled. No new matter is introduced.

Response to the Examiner's Rejections

Legal Standard For Rejecting Claims Under 35 U.S.C. §112, First Paragraph

Section 112, first paragraph, requires a "written description of the invention" and an enabling disclosure. To meet the written description requirement, the application must "convey with reasonable clarity to those skilled in the art that . . . he or she was in possession *of the invention.* The invention is, for purposes of the "written description" inquiry, *whatever is now claimed. Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). The examiner bears the initial burden of presenting evidence or reasoning to explain why persons skilled in the art would not recognize in the original disclosure a description of the invention defined by the claims. *In re Wertheim*, 541 F.2d 257, 263 (CCPA 1976).

The legal standard for determining whether the disclosure is enabling is whether a person reasonably skilled in the art could make or use the invention without undue experimentation based on the disclosure and on information known in the art. *United States v. Telectronics, Inc.*, 857 F.2d 778, 8 USPQ2d 1217 (Fed. Cir. 1988). The fact that

experimentation may be complex does not necessarily make it undue if the art typically engages in such experimentation. *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988). That is, the test of enablement is not whether any experimentation is required, but whether, if experimentation is necessary, it is undue. *In re Angstadt*, 537 F.2d 498, 190 USPQ 214 (CCPA 1976).

The factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue" include, but are not limited to: The breadth of the claims; the nature of the invention; the state of the prior art; the level of one of ordinary skill; the level of predictability in the art; the amount of direction provided by the inventor; the existence of working examples; and the quantity of experimentation needed to make or use the invention based on the content of the disclosure. See, for example, MPEP 2164.01(a). It is improper to conclude that a disclosure is not enabling based on an analysis of only one of the above factors while ignoring one or more of the others. MPEP 2164.01(a).

With regard to the burden of proof required to support a rejection under Section 112, the Patent Office is required to assume that the specification complies with the enablement provision of Section 112 unless it has acceptable evidence or reasoning to suggest otherwise. See, for example, *In re Marzocchi*, 439 F.2d 220, 169 USPQ 367 (CCPA 1979). The Patent Office thus must provide reasons, supported by the record as a whole, why the specification is not enabling. Then and only then does the burden shift to the applicant to show that one of ordinary skill in the art could have practiced the claimed invention without undue experimentation. *Gould v. Missinghoff*, 229 USPQ 1 (D.D.C.

1985), aff'd in part, vacated in part, and remanded sub. nom., Gould v. Quigg, 822 F.2d 1074, 3 USPQ2d 1302 (Fed. Cir. 1987). Mere conclusory statements as to the level of ordinary skill in the art are not a sufficient basis for a rejection under 35 U.S.C. §112. *In re Brebner*, 455 F.2d 1402, 173 USPQ 169 (CCPA 1972).

In addition, the law does not require, and indeed prefers, that a patent specification omit that which is well-known. *In re Buchner*, 929 F.2d 660, 18 USPQ2d 1331 (Fed. Cir. 1991).

Re Rejection of Claims 20-24 Under 35 U.S.C. §112, First Paragraph

The examiner rejected claims 20-24, arguing that they failed to satisfy the written description requirement. The examiner stated that his reasoning was the same as stated in paragraph 2 of the Office Action. There, the examiner took issue with the claim limitations of "normal activation/analysis process" and "rapid activation/analysis process" in claim 20 only, arguing that it introduced new matter, and that an algorithm is not a process. Arguing that an algorithm is not a process does not point to alleged deficiencies in the specification that fall short of the written description requirement. Specifically, the examiner did not meet his burden of establishing a prima facie case for the lack of a written description, because he presented no evidence or reasoning to explain why persons skilled in the art would not recognize in the original disclosure a description of the invention defined by the claims. *In re Wertheim*, 541 F.2d 257, 263 (CCPA 1976). Claims 20-24 contain limitations regarding "normal activation/analysis process" and "rapid activation/analysis process," as well as various algorithms. Although the examiner did not meet his burden of establishing a prima facie case, and therefore the applicant has no burden to come forward with contrary evidence, the applicant is doing

so nonetheless. All of these limitations are more than adequately described and enabled in the specification, as set forth below:

For example, the normal activation/analysis process 38 is discussed in paragraphs 0049-0050 on pages 24 and 25. The rapid activation/analysis process 40 is discussed in paragraphs 0051-0054 on pages 25-27.

Specifically, paragraphs 0049-0050, which describe the normal activation/ analysis process 38, are as follows:

> "The normal activation/analysis process 38 is best seen in Figure 3. The first step 42 in the normal activation/analysis process 38 involves activating the positron emitter (i.e., the isotope or isotopes identified in step 32). In one preferred embodiment, the positron emitter is activated by bombarding the specimen 18 with photons 16 from the photon source 12 having energies sufficient to activate the selected positron emitter or emitters, as the case may be. As mentioned above, photons having energies in the range of about 8 MeV to about 22 MeV will activate most of the isotopes (i.e., positron emitters) likely to be found in many common materials. See, for example, Tables I and II. Alternatively, of course, photons having energies either above or below this range may be used, depending on the particular isotope and on the particular material characteristics to be detected. In the example involving chromium-49, the photons 16 produced by the photon source 12 should have energies of at least 20.5 MeV.
>
> The photon-activated positron emitters result in the production of positrons within the specimen 18. Such positrons diffuse or migrate through the material comprising specimen 18 and tend to be attracted to voids or other lattice defects having a favorable electronic potential. Ultimately, a significant number of the positrons produced by the positron emitter or emitters will annihilate with electrons, resulting in the formation of gamma rays 20. Such gamma rays 20 are detected in step 44 by the detector 14, which produces raw data 22. The raw data 22 are then analyzed in step 46 to produce output data 26 indicative of at least one material characteristic of the specimen 18. The

output data 26 may be displayed in suitable form on the display system 28. See Figure 1."

Thus, the normal activation/analysis process 38 is sufficiently described in the specification and is not new matter, especially when considered in light of the factors listed in MPEP 2163. That is, level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function and the method of making the claimed invention. Disclosure of any combination of such elements that distinguishes the claimed invention from the prior art is sufficient. MPEP 2163. The examiner did not analyze these factors as set forth in the MPEP. Moreover, with mature technologies, such as the present invention, wherein the knowledge and skill in the art is high, disclosing only the method of making the invention and the function of the invention is sufficient to meet the written description requirement. MPEP 2163; *see In re Hayes Microcomputer Prods. Inc. Patent Litig.*, 982 F.2d 1527, 1534 (Fed. Cir. 1992) (disclosure of a microprocessor having certain capabilities and the desired functions met the written description requirement, although the actual program was not disclosed). The state of the prior art in this field is well-developed, as evidenced by the prior art of record in this application. The level of one of ordinary skill in the art is also high, and certainly does not require a detailed, line-by-line recitation of computer code that may be required to perform the normal activation/analysis process 38. Stated another way, while some experimentation might be required to settle upon an optimum arrangement for a particular application, such experimentation is allowable in that it would not be "undue."

In addition, the description also clearly explains that the normal activation/analysis process 38 involves both the activation of the positron emitters as well as an analysis of the raw data 22 collected by the detector.

Turning now to the rapid activation/analysis process 40, paragraphs 0051-0054 of the present application describe the rapid activation/analysis process 40 as follows:

> "If the half life of the isotope or positron emitter to be activated is less than a few tens of seconds, as determined in step 36, the method 30 executes the rapid activation/analysis process 40. With reference now to Figure 4, the rapid activation/analysis process 40 involves alternate photon bombardment and subsequent gamma ray detection of the specimen 18. More specifically, the specimen 18 is first exposed to the photons 16 from the photon source 12 for a selected time at step 48. Then, gamma rays 20 resulting from the annihilation of positrons with electrons are detected via detector 14 at step 50. If a sufficient number of gamma rays 20 have been detected, as determined in step 53, the method 30 proceeds to step 54 wherein the data are analyzed to produce output data 26 (Figure 1) that are indicative of at least one material characteristic of the specimen 18. The output data 26 may be displayed in suitable form on the display system 28. Alternatively, if an adequate number of gamma rays 20 have not been detected, the method 30 returns to step 48 wherein the specimen 18 is again exposed to photons 16 from the photon source 12 for a selected time. This rapid activation/analysis process 40 is repeated until a sufficient number of gamma rays 20 have been detected.
>
> The alternate photon activation and detection steps 48 and 50, respectively, may be accomplished in a variety of ways. For example, with reference now to Figure 5, the specimen 18 could be alternately moved between an activation position 56 and a detection position 58. A suitable mechanical arrangement (not shown) may be provided to move the specimen 18 between the activation position 56 and the detection position 58. Alternatively, of course, the specimen 18 could remain stationary while the photon source 12 and detector 14 are moved. Again, a suitable arrangement for so moving the photon source 12

and detector 14 could be easily arrived at by persons having ordinary skill in the art after having become familiar with the teachings of the present invention.

Regardless of the particular arrangement for moving the specimen 18 between the activation position 56 and the detection position 58 (or for moving the photon source 12 and detector 14), the specimen 18, while in the activation position 56, is positioned adjacent the photon source 12 so that the specimen 18 receives photons 16 therefrom. Then, after having been exposed to the photons 16 for the selected time, the specimen 18 is moved to the detection position 58. While in the detection position 58, the detector 14 detects gamma rays 20 emitted from the specimen 18 as a result of positron/electron annihilations. The times in which the specimen 18 is located in the activation position 56 and in the detection position 58 will vary depending on the particular positron emitter or emitters involved and on the particular material characteristics to be studied. However, the time during which the specimen 18 remains in the activation position 56 should be sufficient to activate a sufficient number of positron emitters so that the gamma rays 20 resulting from positron/electron annihilations will be detectable by the detector 14. Similarly, the specimen 18 should remain in the detection position 58 for a time sufficient to detect gamma rays 20 resulting from annihilation events. Generally speaking, the time that the specimen 18 should remain in the detection position 58 should be at least equal to one half-life of the activated positron emitter or emitters, although the time could be longer or shorter than the half-life. In consideration of these matters, then, the present invention should not be regarded as limited to any particular times for each position.

As was briefly mentioned above, other arrangements are possible for alternately activating the positron emitters then detecting the gamma rays 20 resulting from annihilation events. For example, in another arrangement, the photon source 12 is alternately energized for the activation time period, then de-energized for a detection time period in which gamma rays 20 emitted from the specimen 18 are detected by the detector 14. Again, the activation time period should be set so as to activate a sufficient quantity of positron emitters, whereas

> the detection time period should encompass at least one half-life of the activated positron emitter or emitters."

Those portions of the specification that describe the rapid activation/analysis process 40 in detail make clear that the rapid activation/analysis process 40 is sufficiently described in the specification and is not new matter, particularly when considered in light of the factors listed in MPEP 2163 identified above. The same arguments advanced above with respect to normal activation/analysis process 38 apply in this instance, as well.

The description also makes clear that the rapid activation/analysis process 40 involves both the activation of the positron emitter or emitters as well as the analysis of the raw data 22 collected by the detector 14.

In addition, applicant notes that it is well-established law that the applicant may be his own lexicographer. Applicant coined the terms "normal activation/analysis" to describe the process 38 and "rapid activation/analysis" to describe the process 40. As used in the specification, and as explained above, these terms are not repugnant to the normal meanings of the terms taken separately, thus are acceptable for use in the patent application.

To the extent the examiner believes that the algorithms claimed are not adequately described in the specification, that is an untenable view, as the specification explicitly discloses processing the raw data 22 in accordance with one or more algorithms. This is disclosed in paragraphs [0027] – [0030], as follows:

> Referring now to Figures 1 and 6, the data collection and processing system 24 may be provided with a data processing system 60 which processes the raw data 22 from the detector 14 in accordance with one or more algorithms in order to produce the output data 26 which are indicative of at least one material characteristic of the

specimen 18. For example, in one preferred embodiment, the data processing system 60 may process the data 22 in accordance with a Doppler broadening algorithm 62, a positron lifetime algorithm 64, and a three-dimensional (3-D) imaging algorithm 66.

The various algorithms (e.g., 62, 64, and 66) process the data 22 from the detector 14 in order to produce output data 26 which are indicative of at least one material characteristic of the specimen 18. For example, the Doppler broadening algorithm 62 is useful in assessing the characteristics of lattice defects contained in the specimen 18, such as, for example, damage resulting from mechanical and thermal fatigue, embrittlement, annealing, or manufacturing defects. The positron lifetime algorithm 64 is also useful in assessing the characteristics of lattice defects. In addition, information obtained from the mean lifetime of various defect components may be used to derive information relating to changing characteristics of the defects present in the specimen 18. The 3-D imaging algorithm 66 may be used to in conjunction with either the Doppler broadening algorithm 62 or the positron lifetime algorithm 64 to produce three-dimensional information regarding locations of the lattice defects contained within the specimen 18. Alternatively, the raw gamma ray data 22 from the detector 14 may be processed in accordance with other algorithms that are now known in the art or that may be developed in the future to derive other types of information, as would be obvious to persons having ordinary skill in the art after having become familiar with the teachings of the present invention. Consequently, the present invention should not be regarded as limited to the particular processing algorithms shown and described herein.

Regardless of the particular algorithm (e.g., 62, 64, or 66) that is used to process the raw data 22, the resulting output data 26 may be presented in human-readable form on a suitable display system 28, such as a CRT or LCD display. Alternatively, other types of display systems may be used to present the output data 26 in useable form.

For each algorithm, e.g., 62, 64, and 66, the data processing system 60 may utilize a selective activation algorithm 68 in which certain isotopes or positron emitters in the specimen 18 are selected to be activated. Stated

> simply, the selective activation algorithm 68 allows the data processing system 60 to set the energy level of the photons 16 produced by the photon source 12. See Figure 1. As mentioned above, the selective activation algorithm 68 provides the option to allow the user to activate certain of the isotopes or positron emitters comprising the specimen 18.

Those portions of the specification that describe the various algorithms (e.g., 62, 64, and 66) make clear that the algorithms are sufficiently described in the specification, particularly when considered in light of the factors listed in MPEP 2163 identified above. That is, level of skill and knowledge in the art, partial structure, physical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function and the method of making the claimed invention. Disclosure of any combination of such elements that distinguishes the claimed invention from the prior art is sufficient. MPEP 2163. The examiner did not analyze these factors as set forth in the MPEP. Moreover, with mature technologies, such as the present invention, wherein the knowledge and skill in the art is high, disclosing only the method of making the invention and the function of the invention is sufficient to meet the written description requirement. MPEP 2163; *see In re Hayes Microcomputer Prods. Inc. Patent Litig.*, 982 F.2d 1527, 1534 (Fed. Cir. 1992) (disclosure of a microprocessor having certain capabilities and the desired functions met the written description requirement, although the actual program was not disclosed). The state of the prior art in this field is well-developed, as evidenced by the prior art of record in this application. The level of one of ordinary skill in the art is also high, and certainly does not require a detailed recitation of the various algorithms (e.g., 62, 64, 66) used to process the data 22 from the detector 14 in order to produce output data 26. The applicant has specifically pointed out in the

specification that the various algorithms are well known in the art. See paragraph [0056] ("Several different types of Doppler broadening techniques have been developed and are being used in the position annihilation art and could easily be implemented in the present invention by persons having ordinary skill in the art after having become familiar with the teachings of the present invention;" the Doppler broadening algorithm 62 may comprise the Doppler broadening algorithm described in U.S. Patent No. 6,178,218 B1, which is specifically incorporated herein by reference for all that it discloses"); paragraph [0057] ("since systems for detecting positron lifetimes, as well as the algorithms utilized thereby, are well-known in the art and could be easily provided by persons having ordinary skill in the art after having become familiar with the details for the present invention, the positron lifetime algorithm 64, as well as the other systems and detectors that may be required or desired, will not be described in further detail"). In addition, the paper entitled "Positron Annihilation Spectroscopy" which was published in vol. 14 of the Encyclopedia of Applied Physics in 1996 (and cited by the application in the Information Disclosure Statement includes descriptions of these types of algorithms, demonstration that they are known in the art. It is well-established that the law does not require, and indeed, prefers that an application omit from the specification that which is well known. *In re Hayes Microcomputer Prods. Inc. Patent Litig., supra; In re Buchner, supra.* Stated another way, while some experimentation might be required to settle upon an optimum algorithm or combination of algorithms for a particular application, such experimentation is allowable in that it would not be "undue."

Re Rejection of Claims 26-28 Under 35 U.S.C. § 112, First Paragraph

The examiner rejected claims 26-28, arguing that they meet neither the written description requirement nor the enablement requirement. The examiner is incorrect.

The examiner takes issue with the claim language " a means for activating a positron emitter." That limitation is adequately described and enabled in the specification. A "positron-emitter" is a term that the applicant specifically described in the specification as a neutron-deficient isotope that decays into non-neutron deficient atoms by the emission of positrons and neutrinos. Paragraph [0020]. Indeed, consistent with that definition," positron emission" is defined in the McGraw Hill Scientific and Technical Dictionary as "[a] ß-decay process in which a nucleus ejects a positron and a neutrino." See Appendix A to Preliminary Amendment, paper no. 14, which is incorporated herein by reference. The fact that decay is involved is well understood by those in the art. The means for activating the positron emitters by causing their decay and the emission of positrons is defined in the specification in paragraph [0020] as well, in a manner that would be easily understood by one of ordinary skill in the art:

> "As will be described in greater detail below, the method and apparatus of the present invention are suitable for use with materials or specimens 18 that will produce positrons in response to photon bombardment from the photon source 12. One way for producing positrons involves the decay of neutron-deficient isotopes. In the present invention, the photons 16 from the photon source 12 produce such neutron-deficient isotopes within the specimen 18 by removing "knocking-off" neutrons from atoms within the specimen 18. The neutron-deficient isotopes (referred to herein in the alternative as "positron emitters") then decay into non-neutron-deficient atoms by the emission of positrons and neutrinos. Consequently, the bombardment of a material or specimen 18 containing certain isotopes amenable loss of neutrons by such photon bombardment will result in the formation of positrons within the material or specimen 18. This process is referred to herein as "photo-neutron activation" or, simply, "photon activation."

> Any material containing isotopes susceptible to such photon activation are suitable for use with the present invention."

The normal activation/ analysis process 38 and the rapid activation/analysis process 40 entail activation of the positron emitters, as described in detail above. Thus, the examiner has failed to make out a prima facie case of lack of a written description or enablement.

The examiner also argues that the "claim language implies that a positron emitter can be activated or deactivated by some means." In construing a claim, the focus is the words used in the claims, because those words are the ones "the patentee chose to use to 'particularly point out and distinctly claim the subject matter which the patentee regards as his invention'". *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 326 F.3d 1215, 1220 (Fed. Cir. 2003) (quoting *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1331 (Fed. Cir. 2001). However, the claim language does not contain any limitation related to deactivation means and it is improper to read such a limitation into the claim language. The examiner's judicious use of the term "implies" means that the actual words are not there. To the extent the examiner is reading into the claim that which he is gleaned from the specification, that is improper as well. *Gart v. Logitech, Inc.*, 254 F.3d 1334 (Fed. Cir. 2001). And, finally, even if the claim terms were susceptible to more than one ordinary meaning, one looks to the specification because it points away from improper meanings. *Brookhill-Wilk 1, LLC*, 326 F.3d at 1222.

In this case, the specification points away from the "implied" construction proposed by the examiner. The claims contain a limitation regarding "means for alternately activating the positron emitter within the specimen being tested and detecting a positron annihilation event." When read in the context of the entire claim and in light

of the specification, it becomes clear that the alternation referred to relates to alternating between activation and detection steps. Deactivation means are not mentioned in the specification. Paragraph [0026] states:

> The alternate photon activation and detection steps 48 and 50, respectively, may be accomplished in a variety of ways. For example, in one preferred embodiment, the specimen 18 is alternately moved between an activation position 56 and a detection position 58. See Figure 5. While in the activation position 56, the specimen 18 is positioned adjacent the photon source 12 so that the specimen receives photons 16 therefrom. Then, after having been exposed to the photons 16 for the selected time, the specimen 18 is moved to the detection position 58. While in the detection position 58, the detector 14 detects gamma rays 20 emitted from the specimen 18 as a result of positron/electron annihilations. However, other arrangements are possible for accomplishing the activation and detection steps 48 and 50. For example, in an alternative arrangement, the photon source 12 is alternately energized for the selected time period, then de-energized for a detection time period in which gamma rays 20 emitted from the specimen 18 are detected by the detector 14.

Re Rejections Under 35 U.S.C. § 112, Second Paragraph

The examiner rejected claims 1-3, 5, 7, 8, 26-28 and 30-36 under 35 U.S.C. § 112, second paragraph, as being indefinite because he asserted the term, "lattice characteristic" was "vague and undefined." Claims 1, 8, 20-22, 24, 26-28, 31-36 have been amended at the examiner's suggestion to substitute the term "the presence or absence of a lattice defect" for the term "lattice characteristic." Claims 2-3, 5, 7, and 30 are dependent claims that depend from claims amended to include the limitation "the presence or absence of a lattice defect." In light of these amendments, the examiner's rejections are rendered moot.

Re Rejections Under 35 U.S.C. §102(b) and §103

The legal standards for rejections based on anticipation under §102(b) and obviousness under §103 have been previously set forth in the Application's Preliminary Amendment, paper no. 14 at pages 21-23, and are incorporated herein by reference. As a result of the amendments described above, the examiner's rejections under 35 U.S.C. § 102(b) and § 103(a) are rendered moot. None of the prior art upon which the examiner relies discloses, reveals or suggests the presence or absence of a lattice defect.

Re Rejection of Claims 1-3, 7 and 8 Under 35 U.S.C. §102(b)

The examiner rejected claims 1-3, 7 and 8 Under §102(b) as anticipated by U.S. Patent No. 5,175,756 to Pongratz. Those rejections have been rendered moot by the amendment wherein the limitation "the presence or absence of a lattice defect" was substituted for the term "lattice characteristic." Pongratz does not disclose or reveal the presence or absence of a lattice defect as claimed in this application. Therefore, Pongratz does not meet the strict identity standard required to demonstrate that a reference anticipates.

Re Rejection of Claims 1-3 and 8 Under 35 U.S.C. §102(b)

The examiner rejected claims 1-3 and 8 under §102(b) as anticipated by U.S. Patent No. 4,980,901 to Miller. Those rejections have been rendered moot by the amendment wherein the limitation "the presence or absence of a lattice defect" was substituted for the term "lattice characteristic." Miller does not disclose or reveal the presence or absence of a lattice defect as claimed in this application. Therefore, Miller does not meet the strict identity standard required to demonstrate that a reference anticipates.

Re Rejection of Claim 5 Under 35 U.S.C. §103

The examiner rejected claim 5 under §103 as being obvious over Miller in view of Alex. That rejection has been rendered moot by the amendment of claim 1, from which claim 5 depends, wherein the limitation "the presence or absence of a lattice defect" was substituted for the term "lattice characteristic." Neither Miller nor Alex disclose, reveal or suggest the presence or absence of a lattice defect as claimed in claim 5. Since neither reference discloses, suggests or reveals "the presence or absence of a lattice defect," the references in combination do not therefore contain such a suggestion either. Therefore, based on the amendment, a prima facie case of obviousness cannot be made out.

Re Rejection of Claims 20-24 Under 35 U.S.C. §103

The examiner rejected claims 20-24 under §103 as being obvious over either Pongratz or Miller in view of what the examiner believed to be applicant's admission of what constitutes prior art. That rejection has been rendered moot by the amendment of claim 20, from which claims 21-24 depend, wherein the limitation "the presence or absence of a lattice defect" was substituted for the term "lattice characteristic." Neither Pongratz nor Miller disclose, reveal or suggest the presence or absence of a lattice defect as claimed in claims 20-24. Since none of the prior art references upon which the examiner relies discloses, suggests or reveals "the presence or absence of a lattice defect," the references in combination do not therefore contain such a suggestion either. Therefore, based on the amendment, a prima facie case of obviousness cannot be made out.

Re Rejection of Claims 26-28 and 30-36 Under 35 U.S.C. §103

The examiner rejected claims 26-28 and 30-36 under §103 as being obvious over either Pongratz or Miller in view of what the examiner believed to be applicant's admission of what constitutes prior art. That rejection has been rendered moot by the amendment of claim 26, from which claims 27-30 depend; the amendment of claim 31, from which claims 32 and 33 depend; the amendment of claim 34, from which claim 35 depends; and the amendment of claim 36. By virtue of the amendments, all these claims now contain the limitation "the presence or absence of a lattice defect" which was substituted for the term "lattice characteristic." Neither Pongratz nor Miller disclose, reveal or suggest the presence or absence of a lattice defect as claimed in claims 26-28 and 30-36. Since none of the prior art references upon which the examiner relies discloses, suggests or reveals "the presence or absence of a lattice defect," the references in combination do not therefore contain such a suggestion either. Therefore, based on the amendment, a prima facie case of obviousness cannot be made out.

Re Objection Regarding Claim 30

The examiner objected to claim 30 because it depended from claim 29 which was previously canceled. Claim 30 has been amended to depend from claim 26 instead of claim 29.

Re Objection Regarding New Matter

Although he does not clearly so state, presumably an alternate basis for the examiner's rejection of amended claim 20 was that it added new matter. As the examiner correctly states, "[a]mended claim 20 recites a data processing system operating in accordance with a 'normal activation/analysis process" or a "rapid activation/analysis

process." The basis for the examiner's objection is that a process is not an algorithm. Although the fact that an algorithm is a process is defined in the specification, one need not even reach that inquiry, because there is support in the specification for "normal activation/analysis process" and "rapid activation/analysis process." The paragraphs from the specification disclosing these elements and describing the processes are set forth in their entirety above at pages 15-19 and will not be repeated here. There is ample disclosure of these claim terms and their substitution in claim 20 does not amount to new matter. Indeed, the amendments simply changed the term "algorithm" to "process" which is consistent with the written description.

Applicant believes that all of the claims now pending in this patent application, as amended and described above, are allowable and that all other issues raised by the examiner have been addressed. Therefore, applicant respectfully requests the examiner to reconsider his rejections and to grant an early allowance. If any questions or issues remain to be resolved the examiner is requested to contact the applicant's attorney at the telephone number listed below.

Respectfully submitted,

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